

# The Impact of Death and Dying Education for Undergraduate Students During the COVID-19 Pandemic

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## Abstract

Fear of COVID-19 may make the imminence of death prescient for undergraduate students, increasing death anxiety and worsening mental health. Formal death education may provide benefits such as reduced fear of COVID-19 and death anxiety, and improved mental health. In this study, 86 undergraduate students completed a pre- and post-semester online questionnaire on fear of COVID-19, death anxiety, and mental health outcomes. Findings indicate indirect effects of death anxiety on fear of COVID-19 to anxiety. Moreover, fear of COVID-19, individual concerns about death, and death anxiety were reduced over the semester for undergraduate students in formal death education.

## Keywords

COVID-19, death anxiety, concerns about death, anxiety symptoms

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## Introduction

Undergraduate students may have a variety of reasons for taking a course on death and dying. Some students may be enrolling in courses to understand their personal losses and meet their own bereavement needs (Kastenbaum, 2004). Other students may be facing mental health concerns, personal grief, or seeking a developmentally appropriate situation to address death-related concerns (Brabant & Kalich, 2009). Buckle (2013) found that undergraduate students indicated increasing personal knowledge, professional relevance, personal grief and dying experiences as motivations to take a course on death and dying. She further found that, upon completion of the course, students indicated having reduced fear and anxiety and increased comfort about death and thinking about death, being surprised by the breadth of related information, becoming aware of their own mortality, and greater understanding of their own past grief responses. The value of formal death education is evident (Corr et al., 2019). Formal death education affords students the opportunity to address their own personal needs around bereavement, to explore their own belief systems around death and dying, and to build their own professional competency in managing dying and death in a structured curriculum. However, the impact of a course on death and dying may be particularly acute during the COVID-19 pandemic.

During 2020, as the COVID-19 infection rate increased worldwide, the death rate due to COVID-19 also increased. Although the death rate due to COVID-19 was higher among the elderly, the possibility of death from disease for college students became far more likely than in the past (CDC, n.d.). Until late in 2020, no vaccine was readily available in the United States and eligibility for typical college-aged students was limited until Spring 2021. In addition, in some places, college students engaged in behaviors that increased the risk of infection such as gathering in Greek organization activities, having multiple sexual partners, and frequent alcohol consumption (Kianersi et al., 2021). Hoyt et al. (2021) reported that college students reported a sharp increase in anxiety around health issues during the pandemic. In addition, many college students became very concerned about their own health status, the health of family members, and the health of others around them (Hagedorn et al., 2021). College students who reported the loss of a loved one or friend due to COVID-19 also reported poorer psychological functioning for themselves (López-Castro et al., 2021). Changes in perceived health risks and death-risks accounted for a significant increase in psychological distress during the early part of the pandemic (Robinson & Daly, 2021). For college students, it is likely that the experience of living through the COVID-19 pandemic brought contemplation of death closer and heightened death anxiety and concerns about death. However, it is not known how fear of COVID-19 may have related to their concerns about death and death anxiety.

Death anxiety has been described as being comprised of “several different aspects related to death including, but not limited to, the fear of one’s own death, the fear of others’ dying, the fear of the process of dying, and the fear of the unknown” (Zuccala et al., 2019, p. 1). Death anxiety has been associated with a range of mental health

issues such as somatic disorders, obsessive compulsive disorder, specific phobias, and other anxiety disorders (Iverach et al., 2014). Death anxiety has also been associated with greater employee burnout and less work engagement and less creativity (Sliter et al., 2014). Among college students, Ford et al. (2004) found that those who had higher fear of death—death anxiety—reported greater willingness to engage in risky sexual activities. Nienaber and Goedereis (2015) found that younger undergraduate students had higher levels of Fear of the Dying Process and Fear of Conscious Death, aspects of death anxiety, in comparison to graduate students. Taken together, death anxiety may be indicative of larger mental health issues and may be more elevated among college students. What is not well known is how fear of COVID-19 may relate to death anxiety and mental health outcomes. It is likely that the association between fear of COVID-19 and mental health outcomes may be indirectly affected by death anxiety.

### *The Present Study*

First, we wanted to investigate if death anxiety mediates the association between fear of COVID-19 and mental health outcomes (i.e., depression and anxiety). In addition, given the potential for change in attitudes towards death and dying through formal death education, we wanted to investigate if undergraduate students enrolled in a class on Death and Dying indicated a reduction in fear of COVID-19, death anxiety, and concerns about death over the course of the semester in comparison to peers who do not receive formal death education.

## **Method**

### *Procedure*

Undergraduate students enrolled in a Death and Dying course were solicited to participate in a course evaluation study at the beginning of the semester and at the end of the semester. Students enrolled in a similar course related to families also participated and served as controls for the participants in the Death and Dying course. Participants completed the online survey administered via the campus Qualtrics software in the first two weeks and again in the last two weeks of the 15-week semester. Participants provided student identification numbers for matching pre and post information, which was held confidentially until the conclusion of each semester. Data were collected in the Fall 2020 and the Spring 2021 semesters, respectively. This study complied with the campus's Committee for the Protection of Human Subjects protocols.

Initially, students registered for the Death and Dying course in Spring 2020, knowing that the course would be delivered in an online modality for Fall 2020. For Spring 2021, students registered in October 2020, knowing that the course content would be delivered online. The course is an elective course in the Human Development and Family Science major and minor and was open to students in other majors as well.

The course was taught online both semesters and was conducted mostly asynchronously with *Death & Dying, Life & Living* (Corr et al., 2019) as the core textbook. The course had never been offered before at the University and was a new course at that time. Course design and assignments were constructed in alignment with the textbook and review of similar coursework and syllabi at other institutions. The control course also had never been offered before and was delivered online as well.

## Participants

Of the 185 total participants, 86 undergraduate students (Female = 83, Male = 3) completed both the initial and the concluding surveys. Those individuals who did not complete both surveys were excluded from the study sample. The ethnic composition of the sample was 2% African American, 5% Asian American, 26% White, 63% Latino, and 5% Mixed/Multiethnic, and participants ranged in age from 19.75 to 39.37 years ( $M = 23.92$  years,  $SD = 3.90$ ). Of the participants, 43 were enrolled in the Death and Dying course, 41 in the control course (a family-related course), and two were enrolled in both. For analyses, the two enrolled in both courses were included with those enrolled in the Death and Dying course. There were no significant differences by age, ethnicity, or gender between the Death and Dying course participants and the family course participants or between the Fall and Spring semesters, respectively.

## Measures

**Demographics.** Participants indicated their gender, birthdate, ethnicity, and current course enrollment.

**Fear of Covid-19 Scale.** Participants answered a 9-item measure of fear of COVID-19 (Ahorsu et al., 2020), using a scale 1 = *strongly disagree* to 5 = *strongly agree*. A sample item is “I am very afraid of coronavirus-19.” Participants completed this measure at the beginning and at the end of semester. Cronbach’s alpha for beginning was .87 and at the end .89.

We used two measures to assess death anxiety. **Templer’s Death Anxiety Scale (1970)** offered a well-used measure with limited psychometric power. **Mazor et al.’s (2004) Concerns about Dying** offered a general subscale that assesses constructs differently from Templer and includes two subscales around spirituality and caring for individuals who are dying.

**Death Anxiety.** Participants completed Templer’s Death Anxiety Scale. This measure includes 15 items, which participants rated as 1 = *true* and 2 = *false*. A sample item is “I am very much afraid to die.” A higher score indicates greater death anxiety. Participants completed this measure at the beginning and at the end of semester. Cronbach’s alpha for beginning was .60 and at the end .60.

**Concerns about Dying.** Participants completed the 10-item Concerns about Dying measure (Mazor et al., 2004), using a scale of 1 = *strongly disagree* to 5 = *strongly agree*. Participants completed this measure at the beginning and at the end of semester. The measure yields three subscales: General concerns about death, Spirituality, and Individual care. The three items for the patient subscale in the original measure were modified for this study to use the word “individuals” instead of “patients.” A sample item for the general scale is “I get anxious or uncomfortable when I think about my own death.” A sample item for the spirituality subscale is “I believe that my soul or spirit will continue after death.” A sample item for the individual care subscale is “I am worried about how I will react emotionally to dying individuals.” Cronbach’s alpha for beginning was .71, .71, and .79, respectively, and at the end, .74, .43, and .81, respectively.

**Sadness/Depressive Symptoms.** Participants completed the 8-item PROMIS sadness and depressive symptom scale, using a scale of 1 = *never* to 5 = *almost always* (Hays et al., 2009). A sample item is “In the past 7 days, how often you felt the following: I could not stop feeling sad.” Cronbach’s alpha was .96 for this sample at the beginning and .96 at the end.

**Anxiety Symptoms.** Participants completed the 8-item Neuro-QOL Anxiety, Short Form, using a scale of 1 = *never* to 5 = *almost always* (Cella et al., 2012). A sample item included “In the past 7 days, how often you felt the following: I felt uneasy.” Cronbach’s alpha was .92 and .93, at the beginning and the end, respectively, for this sample.

## Results

First, we investigated if there were any differences between the Fall and the Spring samples for age, gender, and ethnicity. There were no significant differences. In addition, we investigated if there were any differences by class (i.e., Death and Dying vs. control) for age, gender, and ethnicity. There were no significant differences.

To assess the associations among the variables of interest, we conducted Pearson-product moment correlations. Fear of COVID-19 was correlated significantly with Concerns about Death-General ( $r(86) = .42, p < .001$ ), Death Anxiety ( $r(86) = .42, p < .001$ ), and Anxiety ( $r(86) = .31, p = .004$ ). Concerns about Death-General was significantly associated with Concerns about Death-Individual care ( $r(86) = .49, p < .001$ ), Death Anxiety ( $r(86) = .62, p < .001$ ), and Anxiety ( $r(86) = .21, p = .05$ ). Concerns about Death-Spirituality and Concerns about Death-Individual care were inversely associated ( $r(86) = -.22, p = .04$ ). Concerns about Death-Individual care was associated with Fear of Covid-19 ( $r(86) = .18, p = .10$ ), Concerns about Death-General ( $r(86) = .49, p < .001$ ), Concerns about Death-Spirituality ( $r(86) = -.22, p = .04$ ), Death Anxiety ( $r(86) = .52, p < .001$ ), Anxiety ( $r(86) = .27, p = .01$ ), and

**Table 1.** Correlations among variables of interest.

	1	2	3	4	5	6	7
1. Fear of COVID-19	.57***						
2. Concerns about death-general	.42***	.53***					
3. Concerns about death-spiritual	-.01	-.17	.67***				
4. Concerns about death-individual care	.18†	.49***	-.22*	.28**			
5. Death anxiety	.42***	.62***	-.06	.52***	.34**		
6. Depression	.09	.17	.09	.35***	.33**	.39***	
7. Anxiety	.31**	.21*	.19†	.27*	.41***	.60***	.44***

Note: Correlations on the diagonal are the pre and post score correlations. †  $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Depression ( $r(86) = .35, p < .001$ ). In addition, all the variables were significantly intercorrelated with the end-of-semester scores ( $r$ 's = .28–.67,  $p$ 's < .001–.01). See Table 1 for detail.

To investigate if death anxiety mediated the association between fear of COVID-19 and mental health outcomes, we used the PROCESS macro (Hayes, 2013) for SPSS. Fear of COVID-19 was the independent variable with mental health outcomes (i.e., depressive symptoms and anxiety symptoms) as the dependent variable with the death anxiety measures as the mediators. We conducted separate analyses for each mental health outcome. There were significant direct effects of Fear of COVID-19 on Death Anxiety, Concerns about Death-General, and Concerns about Death-Individual care. In addition, there were direct effects of Death Anxiety and Concerns about Death-Spirituality on Anxiety, respectively. The indirect effects of Fear of COVID-19 on Anxiety was through Death Anxiety. There were no indirect effects of other measures of death anxiety. In testing the direct and indirect effects of Fear of COVID-19 on Depression, there were few direct effects and no indirect effects. See Table 2 for detail.

To investigate if scores on the death anxiety-related measures decreased, we conducted paired  $t$ -tests for individuals' scores obtained at the beginning of the semester and the score obtained at the end of the semester, separately for each class. Indeed, the participants in the Death and Dying class showed a significant reduction in Fear of Covid-19,  $t(44) = 2.98, p = .005$ , Concerns about Death-Individual,  $t(44) = 2.90, p = .006$ , and Death Anxiety,  $t(44) = 3.18, p = .003$ , whereas the participants in the control course showed no significant reduction in scores. See Table 3 for detail.

## Discussion

During the Covid-19 pandemic, the possibility of death became more imminent. Pyszczynski et al. (2021) noted, using Terror Management Theory, that the pandemic raised anxiety and existential terror of death for many people. For the relatively young and healthy, the pandemic may have brought contemplation of death closer or

**Table 2.** Direct and Indirect Effects of Death Anxiety on Anxiety.

Dependent Variable	Effect	B	SE	t	p	LLCI	UPCI
Anxiety							
Direct effects							
	Fear of COVID-19 > death anxiety	.17	.04	4.21	<.001	.09	.25
	Fear of COVID-19 > concerns about death-general	.05	.01	4.23	<.001	.03	.08
	Fear of COVID-19 > concerns about death-spirituality	-.00	.02	-.05	ns	-.04	.03
	Fear of COVID-19 > concerns about death-individual care	.03	.02	1.68	.10	-.00	.06
	Fear of COVID-19 > anxiety	.03	.02	1.53	ns	-.01	.06
	Death anxiety > anxiety	.12	.05	2.41	.04	.02	.22
	Concerns about death-general > anxiety	-.13	.16	-.83	ns	-.44	.18
	Concerns about Death-spirituality > anxiety	.22	.09	2.32	.02	.03	.40
	Concerns about death-individual care > anxiety	.18	.13	1.42	ns	-.07	.43
Indirect effects of fear of COVID-19 on anxiety							
	Through death anxiety	.02	.01			.01	.04
	Through concerns about death-general	-.01	.01			-.03	.01
	Through concerns about death-spirituality	-.00	.00			-.01	.01
	Through concerns about death-individual care	.00	.01			-.01	.01

heightened existing anxieties about death. At the same time, there may be a benefit of formal death education for relatively young and healthy college students who, during the pandemic, are facing the possibility of death. At a time when their awareness of death may be heightened, learning about death, death rituals, and death practices in a class may reduce overall anxiety about death and relate to their mental health outcomes. Indeed, [Brabant and Kalich \(2009\)](#) found that the undergraduates in their study were taking a death education course because they were seeking help with their own encounters with death. During the pandemic, the same may have occurred.

The relationship between fear of COVID-19, death anxiety, and mental health outcomes are likely interrelated. In this study, fear of COVID-19 was associated with anxiety about death and aspects of death anxiety, specifically. During the COVID-19 pandemic, when the imminence of death was heightened, students with greater death anxiety may have poorer mental health outcomes, specifically anxiety. Given the close relationship between death anxiety and anxiety, these findings are consistent with past

**Table 3.** Changes on death-related measures and mental health outcomes for Death and Dying students and controls.

Measures	Death and Dying students			Family course students		
	Pre <i>M</i> ( <i>SD</i> )	Post <i>M</i> ( <i>SD</i> )	<i>t</i> ( <i>df</i> )	Pre <i>M</i> ( <i>SD</i> )	Post <i>M</i> ( <i>SD</i> )	<i>t</i> ( <i>df</i> )
Fear of COVID-19	19.58 (5.83)	17.13 (6.44)	2.98 (44)**	18.61 (7.27)	18.22 (7.34)	.36 (40)
Concerns about death-general	3.40 (.80)	3.19 (.83)	1.69 (44)†	3.21 (.86)	3.26 (.78)	-.44 (40)
Concerns about death-spiritual	2.63 (1.00)	2.56 (.77)	.65 (44)	2.74 (1.14)	2.71 (1.01)	.28 (40)
Concerns about death-individual	3.72 (.90)	3.25 (.92)	2.90 (44)**	3.64 (.98)	3.87 (.74)	-1.46 (40)
Death anxiety	9.64 (2.43)	8.18 (2.73)	3.18 (44)**	8.63 (2.82)	8.88 (2.78)	-.54 (40)
Depression	2.45 (1.13)	2.46 (1.06)	-.05 (44)	2.42 (1.03)	2.59 (1.01)	-.82 (40)
Anxiety	2.92 (1.00)	2.84 (.89)	.58 (44)	2.93 (.98)	3.00 (.95)	-.54 (.60)

Note: †  $p < .10$ , \*\* $p < .01$ .

research (Iverach et al., 2014). For this study, novel findings indicate that the relationship between fear of COVID-19 and anxiety was through death anxiety. These findings demonstrate that higher death anxiety may have had a synergistic effect with fear of COVID-19 to bring about greater anxiety and poor mental health outcomes.

In addition, formal death education may reduce death anxiety and fear of COVID-19. Findings from this study support the notion that individuals in a formal death education environment have reduced fear of COVID-19, general concerns about dying, concerns about working with those individuals who are dying, and death anxiety in comparison to individuals who do not receive formal death education and are in a control course. These findings are consistent with the findings of Buckle (2013) who found that students' reported changes in personal attitudes towards death were reduced at the conclusion of a course.

The strengths of this study are in measuring a contemporary fear of death at a time when the potential for death was perceived by some as imminent, due to the COVID-19 pandemic. Given that data was collected prior to the wide accessibility of vaccination against COVID-19, which reduced the risk of serious illness and death from COVID-19, findings capture how the proximate fear of death relates to mental health outcomes. In addition, the findings demonstrate that the potential impact of formal death education can



have direct impacts and particularly in ameliorating the fear of dying and death anxiety at a time when the potential for death is heightened. In the future, it may be useful to see how fear of COVID-19 reduces with wider vaccination and lowering COVID-19 infection rates and how the association with death anxiety is affected. Furthermore, now that young people have had a closer experience than in the recent past with the potential of death from COVID-19, experiences of death anxiety may have shifted. For some young people, death anxiety may now be reduced because they “survived” the pandemic or may be heightened because of the potential for death at time in their lives when death is perceived as distal. The future implications on death anxiety may be similar to some individuals’ past experience with the HIV/AIDS epidemic (Miller et al., 2012). In addition, for young people, the closer experience with the potential for death may also trigger a renewed interest in understanding death and dying in formal settings, given that these findings indicate a the reduction of death anxiety from formal death education.

### *Limitations*

The findings in this study should be interpreted in light of several limitations. The sample was highly skewed towards women, which may limit generalizability. Lester et al. (2007) has reported, cross-culturally, that women self-reported higher death anxiety than men. The findings may then be indicative of women’s responses during the pandemic. In addition, past research, such as Chow (2017), affirmed that non-White respondents report higher levels of death anxiety than their White peers. The sample in the study was 75% non-White, which may represent findings that pertain to an ethnically diverse population and not to populations that are majority White. In addition, the reliability of some of the measures were low. For example, Templer’s Death Anxiety measure had alphas of .60 at both administrations, which may indicate the lack of reliability of the measure. Indeed, Nia et al. (2021) found that there were psychometric inconsistencies of Templer’s measure across cultural groups. Given the ethnic diversity of the sample, the lack of reliability of the measure may limit generalizability of the results.

### **Conclusion**

Overall, fear of COVID-19 closely associates with aspects of death anxiety and anxiety. This fear of COVID-19 may make anxiety worse when there is greater death anxiety. At the same time, being in a formal death education class reduces fear of COVID-19, concerns about death, and death anxiety. Taken together, these findings indicate that the benefit of formal death education during the pandemic may be particularly acute.

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